

ber of pounds of soluble acid by twenty-five, of nitrogen by twenty-nine, and of potash by six, and adding all these products together, you will get a fair estimate, in cents, of the value of a ton of the manure. This calculated value will not be likely in any case to come up to the price asked, even though estimated on so liberal a basis; but your best policy will of course be to buy that fertilizer whose calculated value approaches nearest to the selling price.

The cost of the analysis will depend upon the number of substances determined in each sample. The ordinary charges for each substance, such as insoluble phosphoric acid, soluble acid and nitrogen would be from \$10 to \$15.

FODDER.

The kind of raw material that naturally comes next for consideration, with respect to the practical value of its chemical analysis, is the fodder which, with the aid of a good soil, judiciously cultivated and supplied with plant-food, the dairyman produces for the support of his cows. This, although produced from a soil in which the non-volatile part very largely predominates over everything else, and with the aid of manures in which the non-volatile matters also often greatly exceed the volatile in quantity, is itself in all cases composed mostly of volatile and combustible matter, and it owes its value as fodder almost exclusively to this. The material with which to make all this combustible substance has been derived by this plant largely from the air.

This combustible substance is composed, mainly, of four classes of substances, fibre, or insoluble non-nitrogenous substances, starch, sugar, &c., or soluble non-nitrogenous substances, fat, and albuminoids, or nitrogenous substances, this last class being particularly distinguished from the four others in that it contains nitrogen, while they do not.

These different substances have different nutritive functions and values. The albuminoids are the most valuable, in part because the most costly; every pound of albuminoids which the farmer stores in his barn in the fodder that he has harvested, has cost him more than the pound of starch, sugar or fibre; these al-

buminoids are important nutrients of substances more valuable than the vitreous nature of the vitreous matter, and contain

Carefully to get the most out of the material should be, first, for the animal; that is, the material should be thoroughly digested at a temperature at which it should bear a close relation to the animal, in this view of the relation between the animal and the material, or nitrogenous and non-nitrogenous substances, the relative proportions according to the draft, for milk.

For instance, that for 1,000 up profitably should not cost more than 1 pound of substances, of fibre, and in the proportion of the soluble substances, the amount of the substances which

The relative values of the substances is evident from one of the animal economy